

CLAIMS

1. Method for controlling a treatment unit for
5 treating at least one feed gas, by pressure swing
adsorption and for supplying a product gas in which the
treatment unit (16) comprises N adsorption units (R1 to
R6), N being greater than or equal to 1, operating on a
parametrized cycle, and in which use is made of a
10 control unit (30) for controlling the treatment unit
(16), designed to modify at least one parameter of the
cycle in dependence of at least one parameter of the
feed gas or of the product gas, and wherein each time
there is a predicted change in the composition of the
15 feed gas that is to be treated, the control unit (30)
is sent a pre-established signal representing the said
change, and the processing unit (30) processes said
signal to determine the parameters of an exceptional
operating cycle of the treatment unit (16) which cycle
20 is suited to the said predicted change.

2. Method according to Claim 1, wherein said pre-
established signal is representative of the intensity
of the predicted change in the composition of the feed
25 gas.

3. Method according to Claim 1, wherein a reference
signal is constantly sent to the control unit (30), and
in that each time there is a predicted change, the said
30 reference signal is modified to form the pre-
established signal.

4. Method according to claim 1, wherein said pre-
established signal is determined on the basis of the
35 operation of at least one unit arranged upstream of the
treatment unit (16) and at least partially forming the
feed gas to be treated.

5. Method according to claim 1, wherein the duration of the exceptional cycle is predetermined.

6. Method according to claim 1, wherein the duration of the exceptional cycle is indicated to the control unit (30) by the transmission of an end signal, the said end signal being pre-established on the basis of the predicted change in the composition of the feed gas.

7. Method according to claim 1, wherein during each parametrized operating cycle of the treatment unit (16) there are, in succession, a phase of adsorption, at practically a high pressure of the cycle (PH) and a phase of regeneration comprising a step of depressurization down to a low pressure of the cycle (PB) and a step of repressurization practically up to the said high pressure of the cycle, and in that the parameters of the exceptional cycle that are determined by the control unit (30) are chosen from the duration of the phase time ($T\phi^{exc}$) and the duration of at least one of the steps of the regeneration phase.

8. Method according to claim 1, wherein a signal representing the flow rate and/or the density of the feed gas is sent regularly to the control unit (30), and in that the control unit (30) determines the parameters of the exceptional operating cycle of the treatment unit (16), then adjusts these parameters on the basis of the signal representing the flow rate and/or the density of said feed gas.

9. Method according to claim 1, wherein a signal representing the flow rate and/or the composition of the product gas produced by the treatment unit (16) is sent regularly to the control unit (30), and in that the control unit (30) determines the parameters of the exceptional operating cycle of the treatment unit (16), then adjusts these parameters on the basis of the

signal representing the flow rate and/or the composition of said product gas.

10. Method according to any one of the preceding
5 claims, wherein the treatment unit (16) is a unit for the production of substantially pure hydrogen.